Functional Claiming
After Williamson

July 2015
Functional claiming

• **What is it?**
  – Claim language defining components by their function
  – “configured to,” “adapted to,” “programmed to,” “to” or “for”

• **Why use functional claiming?**
  – Allows for broader claiming
  – Avoids need to claim at an implementation level, which may be easier to design-around
Functional claiming: Concerns

- Means-plus-function treatment (§ 112 ¶ 6 / post-AIA f)
  - Focus of today’s discussion and *Williamson*

- Claim construction
  - Functional terms given patentable weight?
  - Art / infringer need only be “capable” of performing function?
  - Not today’s focus

- Indefinite under written description or enablement (§ 112, ¶¶ 1, 2 or post –AIA a,b)
  - Also addressed in *Williamson* for software
Functional claiming: Means-plus-function

- Functional claim language at the precise point of novelty may render a patent invalid as indefinite. See *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1, 12-13 (1946).
  - “means associated with said pressure responsive device for tuning said receiving means to the frequency of echoes…” limitations at issue
  - means-plus-function, § 112, ¶6 enacted in response to this decision
Functional claiming: Means-plus-function

- **35 U.S.C. § 112, ¶ 6 (post-AIA (f))**
  
  An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

- Historically could be disfavored to avoid being limited by the specification (practitioners would avoid use of “means”)
Functional claiming: Means-plus-function

• What receives § 112, ¶ 6 (post-AIA (f)) treatment
  – means for, element, device (*Personalized Media*)
  – Presumption that a term without “means” would not receive § 112, ¶ 6 treatment (*Personalized Media*)
  – Terms with no dictionary definition or understood meaning in the art
    • Colorant selection mechanism (*Abacus*)

• What does not
  – Terms with structure understood in art
    • Circuitry (*Abacus, Linear, Apex*)
Williamson removes strong presumption

• *Williamson* removes strong presumption that a claim without use of “means” is not a § 112, ¶ 6 (post-AIA (f)) claim
  – The presumption is a strong one that is not readily overcome. (*Lighting World*)

• § 112, ¶ 6 (post-AIA (f)) treatment will be accorded a claim if a challenger shows that:
  • the claim fails to ‘recite sufficiently definite structure;’ (“nonce” words are not sufficient structure) OR
  • the claim recites ‘function without reciting sufficient structure for performing that function.’
Introductory Williamson Facts (6,155,840)

- The ‘840 Patent describes methods and systems for distributed learning that utilize industry standard computer hardware and software linked by a network to provide a “virtual classroom.”

- Claim 8 is a system claim that included the limitation at issue, which is:
  - a distributed learning control module
    - for receiving communications transmitted between the presenter and the audience member computer systems; and
    - for relaying the communications to an intended receiving computer system; and
    - for coordinating the operation of the streaming data module.
District Court Holding

- District court found that the “distributed learning control module” limitation of claim 8 was a means-plus-function claim.

- District court further found the specification failed to disclose structure for performing one of the functions, rendering the claim invalid under 35 U.S.C. §112, ¶2.
  - The limitation includes three functions, and only one of those functions was found to lack the necessary algorithm – the “coordinating the operation of the streaming data module” function.
Court’s analysis of past holding’s footing

- Past cases have emphasized that the essential inquiry is not merely the presence or absence of the term “means” but whether the words of the claim are understood by persons of skill in the art to have a sufficiently definite meaning as the name for structure.
  - With or without the term “means,” the meaning of the language of the claims is analyzed to determine if the presumption is overcome as to whether 112,6 should or should not apply
Majority Holding in Williamson

- All previous holdings of heightened presumption explicitly overruled.

- The new standard as to whether 112,6 should apply when a claim limitation does not include “means” is:
  - “Whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. When a claim lacks the word ‘means,’ the presumption can be overcome and 112,6 will apply if the challenger demonstrates that the claim term fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function.’”
Majority Holding in Williamson, continued

- Essentially, the holding eliminates the heightened evidentiary showing

- The presumption associated with the use of “means” is unaffected
  - The presumption is that 112,6 applies with the use of means, but the presumption is rebuttable
Court’s Analysis of the “distributed learning control module” limitation

- The claim limitation is not merely the introductory phrase but the entire provision.

- The format of the clause is in a format that is consistent with traditional means-plus-function claim limitations.
  - “distributed learning control module” for function(s).

- Means is replaced by “module.”
  - Module is a well known nonce word that can operate as a substitute for “means.”
  - Module is a generic description for software or hardware that performs a specific function.

- Module does not provide any indication of structure.
Court’s Analysis of the “distributed learning control module” limitation, continued

• The prefix “distributed learning control” does not impart structure into the term “module.”
  – The specification fails to impart any structural significance to the term.
  – While the modifiers may alter the meaning of the term “module,” there is nothing in the specification or prosecution history that may help construe “distributed learning control module” as the name of a sufficiently definite structure to avoid 112,6.

• The claim does not describe how the “distributed learning control module” interacts with other components in the server in a way that might inform the structure of the limitation or otherwise impart structure to the limitation as recited in the claim.
Court’s Analysis of the “distributed learning control module” limitation, continued

- Expert declaration cannot save the claim.
- The expert declaration fails to describe how the “distributed learning control module,” through interactions with the other components of the claim, is understood as the name for structure.
- Structure cannot be created where none is disclosed even if one skilled in the art would be able to program a computer to perform the corresponding functions.
• Construing a means-plus-function claim is a two step process:
  - 1. Identify the claimed function.
  - 2. Determine what structure, if any, disclosed in the specification corresponds to the claimed function.
    • When there are multiple claimed functions, corresponding structure for each function must be included.
• If the specification fails to disclose “adequate” corresponding structure, the claim is indefinite.
Construing means-plus-function claims, cont’d

- Structure disclosed in the specification qualifies as corresponding structure if the intrinsic evidence clearly links or associates that structure to the function recited in the claim.
  - The corresponding disclosure must be “adequate” to achieve the claimed function.
  - If one of ordinary skill in the art would be unable to recognize the structure and associate it with the corresponding function, a means-plus-function clause is indefinite.
Construing means-plus-function claims, cont’d

• Computer based limitations:
  – Claim limitations subject to 112,6 that must be implemented in a special purpose computer require the structure disclosed in the specification to be more than simply a general purpose computer.
    • A special purpose computer is a general purpose computer programmed to perform particular functions pursuant to instructions from program software.
    • Algorithms are required in the specification for performing the claimed functions, which may be mathematical formulas, in prose, or as a flow chart, or in any other manner that provides sufficient structure.
  – Functions do not disclose algorithms.
Construing means-plus-function claims, cont’d

- Application of the analysis to the present facts:
  - The ‘840 Patent specification was clear that the distributed learning control module cannot be implemented on a general purpose computer, thus, an algorithm must be disclosed.
  - Disclosing what the module does, e.g., the functions performed, is not the same as disclosing the algorithm needed to perform the functions.
  - A user interface is not an algorithm.
  - As previously noted, the testimony of one of ordinary skill in the art cannot supplant the total absence of structure from the specification.
• The “distributed learning control module” was correctly determined to be a means-plus-function limitation because:
  – The term module is a nonce word standing in for means, and
  – The clause was in the form of a traditional means-plus-function claim

• Claims 8-16 are invalid for lack of disclosure corresponding to the “coordinating” function of the “distributed learning control module.”
Breakdown of the new 112.6 analysis when “means” is absent from the claim

• 112.6 will not apply if the words of the claim are understood by person of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.

• 112.6 will apply if the claim:
  – Fails to recite “sufficiently definite structure,”
    • OR
  – Recites “function without reciting sufficient structure for performing that function.”
What to do?

• Be cognizant of whether you intend to avail yourself of (§ 112 ¶ 6 / post-AIA (f))
  – Do you intend to claim a component performing a function, where disparate structures may be used to implement the component?
  – If yes, explicitly tie the claimed functions to example structures / algorithms in the specification
  – If not, ensure actual structure is claimed
    • And explicitly tie arguable functional recitations to example structures / algorithms in the specification
    • Insure against unfortunate outcome of § 112 ¶ 6, post-AIA (f) treatment followed by § 112 ¶ 2 / post-AIA (b) invalidity
What likely is/is not “sufficiently definite structure?”

- Sufficiently definite structure is:
  - Structure (e.g., mathematical formula, prose, flow diagram) that one skilled in the art would understand to be adequate to perform the corresponding function
  - Detailed prose provided in the specification that described how specific software products operate to implement the claimed functions.
    - *TecSec, Inc. v. IBM*, 731 F.3d 1336 (2013)

- Distinguish between physical structure and algorithmic-type structure

- Sufficiently definite structure is not:
  - Functions themselves
  - User interfaces
  - Expert opinion

- In terms of one of ordinary skill in the art, the question is “whether one of skill in the art would understand the specification itself to disclose structure, not simply whether that person would be capable of implementing that structure.” See MPEP 2181 II A, quoting *Biomedino, LLC v. Waters Technologies Corp.*
Avoiding (§ 112 ¶ 6 / post-AIA (f))

• If a means-plus-function claim is NOT desired, the following recommendations may be helpful:
  – Avoid, to the extent possible, a claim format that could be deemed consistent to a traditional means-plus-function claim:
    • Avoid terms that may be seen as nonce terms, e.g., module, unit, apparatus, element, etc.
    • Avoid following up an introductory “pseudo-structure” term with “for”
      – E.g., avoid “pseudo-structure” for performing “function(s)”
    – Use terms that have a known structural connotation
      • E.g., if a means-plus-function form is unavoidable, then use structural-based modifiers before any potential “nonce” word
Nonce Words – MPEP 2181

• MPEP 2181 governs identifying and interpreting claims as means-plus-function claims.

• MPEP 2181 A provides guidance on terms that have and have not been deemed nonce terms.
  – Examples of nonce terms: mechanism for, module for, device for, unit for, component for, element for, member for, apparatus for, machine for, and system for
  – Examples of terms not deemed nonce terms: circuit, detent mechanism, digital detector, reciprocating member, connector assembly, perforation, sealingly connected joints, and eyeglass hanger member.

• Terms deemed nonce typically are less concrete and can cover a wide array of structure, whereas the terms not deemed nonce appear more concrete and may cover a limited variety of structure.
  – Keep in mind that all terms are read in light of the specification and the surrounding claim language.
What to do? Software...

- *Williamson* did disclose that the modules could be implemented using software programmed on a computer. That wasn’t enough.
When a software claim receives (§ 112 ¶ 6/ post-AIA (f)) treatment:

- Structure must be more than a general purpose computer. (Aristocrat Techs.)

- Specification must disclose an algorithm for performing the claimed function (NetMoneyIN).
Practice Tips

- Ensure specification includes flowchart, formula, or prose that details a specific example of how each function may be performed

- Scientific disclosures/papers are usually replete with algorithmic detail

- Concern will be with tying the disclosed structures / algorithms with the claimed functions, which are often named or articulated at a later time
Thanks!

Q&A